

**UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION**

In re Flint Water Cases
5:16-cv-10444/17-cv-10164

Hon. Judith E. Levy
United States District Judge

_____/

This Motion Relates to:

Bellwether III Cases
_____/

**BELLWETHER III PLAINTIFFS' RESPONSE TO THE VEOLIA
DEFENDANTS' MOTION TO EXCLUDE CERTAIN OPINIONS OF
DR. WILLIAM B. BITHONEY**

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INTRODUCTION

Veolia North America, LLC, Veolia North America, Inc., and Veolia Water North America Operating Services, LLC (collectively “Veolia”) moves (ECF No. 2914) to exclude portions of Plaintiffs’ expert Dr. William Bithoney’s causation testimony regarding the Bellwether III Plaintiffs’ lifelong irreversible injuries. As with their motion to exclude Dr. Bithoney’s testimony prior to the Bellwether I trial, which raised the same objections, Veolia’s motion to exclude portions of Dr. Bithoney’s opinions should be denied.

BACKGROUND

Dr. Bithoney is a medical doctor with over 40 years of experience diagnosing and treating lead exposed children. His impressive qualifications as an expert¹ and the relevancy of his testimony are entirely undisputed. Case No. 17-cv-10164, ECF No. 487 (BWI Bithoney Daubert Order, “BWI Order”) at PageID.36865. The purpose of Dr. Bithoney’s testimony is to assist the jury in understanding the cause of the seven Bellwether III Plaintiffs’ acquired brain injuries—the cognitive and neurological deficits, which were diagnosed by Plaintiffs neuropsychology experts,

¹ Throughout his career, Dr. Bithoney worked at many of the nation’s most prestigious hospitals and personally cared, in a clinical setting for more than 3,000 children with lead poisoning. He also ran the lead poisoning clinic at Boston Children’s Hospital, where he was responsible for 32 percent of the children in the City of Boston, and instructed students on the methodology for differential diagnosis. *See* Ex. A (Bithoney’s CV).

Dr. Jourdan and Dr. Hoffman. Specifically, Dr. Bithoney will explain that lead exposure *could* cause the deficits Plaintiffs suffer from (general causation), and that lead exposure from the Flint Water Crisis was *in fact* the cause of those deficits (specific causation). As relevant to injury, Dr. Bithoney will also explain to the jury that the deficits Plaintiffs suffer from will likely worsen as the children get older.

In its order denying Veolia’s motion to exclude Dr Bithoney’s conclusions regarding the Bellwether I children, the Court summarized Dr. Bithoney’s testimony and his methodology in detail. BWI Order at PageID.36865-74. Dr. Bithoney’s approach for the Bellwether III children is based on the same detailed assessment—relying not only on his education, training, and four decades of experience, but also on his review of documents and information relative to each child, including each child’s medical records, testimony from their parents, detailed interviews, and child specific data relevant to lead exposure—with a few additional elements described below.

I. General Causation

As this Court previously explained, Dr. Bithoney reviewed and gathered a surplus of scientific and medical evidence from which he concluded that there is a “very strong scientific consensus that exposure to lead, even in very small quantities, can cause the neurocognitive symptoms experienced’ by [the Bellwether I children].” BWI Order at PageID.36866-69 (summarizing evidence relied on by Dr.

Bithoney). He has done the same here for the Bellwether III children. *See* Ex. B, (Bithoney BW3 Initial Reports, “Initial Reps.”).²

In support, he once again cited research undertaken by reputable public health organizations such as the Centers for Disease Control and Prevention, the United States Preventive Services Task Force, the National Institute of Health, along with a plethora of peer-reviewed academic papers and studies. *Id.* at pdf pgs. 10, 27, 47, 62, 81, 100, 115. From this abundant research, as well as decades of experience, Dr. Bithoney concluded that there is significant evidence that shows that the types of conditions diagnosed by Dr. Jourdan and Dr. Hoffman are caused by exposure to lead. Ex. C, (Bithoney BW3 Rebuttal Report, “Rebuttal Rep.”) at 4; *see also* Ex. D (Highlighted portions of Initial Rep. of C.D. & Rebuttal Rep., “Highlighted Reports”) at pgs. 11-12, 14-15, 21-24, 42-43, 45-51, 58.

Specifically, Dr. Bithoney summarized that lead exposure, even at low levels, negatively affects a child’s “health and cognition” and can generally cause five categories of conditions: (1) executive functioning deficits; (2) decreased academic achievement; (3) decrements in overall intelligence; (4) reduced attention, hyperactivity, attention deficit hyperactivity disorder (“ADHD”); and (5) adverse behavioral effects, including mood, impulsivity, and aggression. With regard to the

² Plaintiffs incorporate by reference the Court’s description of Dr. Bithoney’s work and include a summary of the additional work he has conducted in the Bellwether III case.

specific diagnostic labels used to describe the cognitive and behavioral deficits observed by Dr. Krishnan and Dr. Hoffman, Dr. Bithoney explained that all of those conditions³ are encompassed by the five categories of conditions which have a causal and associative link with low levels of exposure to lead. Rebuttal Rep. at 2-4.

Veolia's various experts criticized Dr. Bithoney's conclusions, that even low-level lead exposure can cause or is associated with the conditions which these children suffer from. In response, Dr. Bithoney cited an additional authoritative NIH report and at least twenty (20) additional scientific papers that relate to lead and altered behavior. *Id.* at 29-30. He also addressed in detail the claim that he had not adequately demonstrated a causal link between lead and "psychopathology, depression and anxiety, aggression, criminality, or behavioral or emotional problems," citing more than a dozen studies in support. *Id.* at 30-31. Answering other criticisms that he had failed to establish a causal link to all the conditions diagnosed in Plaintiffs, Dr. Bithoney cited numerous studies specifically documenting "a causal relationship with decreased cognitive functioning and mood disorders." *Id.* at 31-32.

II. Specific Causation

Beyond concluding that exposure to lead was *capable* of causing each of the conditions the Bellwether III Plaintiffs had been diagnosed with, Dr. Bithoney also

³ Veolia represents that the Bellwether III children were diagnosed with "18 conditions," however, Dr. Bithoney references *all* of their conditions, which include the totality of the conditions listed in Dr. Hoffman's and Dr. Jourdan's Reports.

conducted an intensive analysis to determine whether their exposure to lead during the time period of the Flint Water Crisis was *in fact* the most likely cause for each of the conditions suffered by Plaintiffs. In assessing specific causation, Dr. Bithoney used the standard methodology he has used for decades, in a clinical context, providing care for thousands of children, and the same methodology he used regarding the Bellwether I Plaintiffs, which this Court has already held is reliable. BWI Order at PageID.36869-74, PageID.36884-98; *see generally* Initial Reps. at pdf pgs. 3, 19, 37, 54, 70, 89, 107; Rebuttal Rep. at 5-9.

Additionally, for the Bellwether III children, Dr. Bithoney conducted a second extensive interview with the parents, where he obtained detailed information regarding the children's nutritional histories (focusing on foods and products known to contain lead) as well as *additional* information regarding lead exposure and water consumption. *See* Ex. E, (Bithoney BW3 Supplement, "Supplement"); Ex. F, (Excerpts of Bithoney BW3 Initial Deposition, "Initial Dep.") at 35:14–36:1. As to lead exposure from the water and alternate sources, Dr. Bithoney conducted a geo-mapping assessment, reviewed home inspection reports and FAST Start data for the addresses where each of the children lived and spent significant time. *See* Supplement at pdf pgs. 10-18; Initial Reps. at pdf pgs. 4-6, 22-24, 39-41, 59, 73-74, 93, 109, 111; and Rebuttal Rep. at 10-13; *see also* Ex. G, (Experts of Bithoney BW3 Rebuttal Deposition, "Rebuttal Dep.") at 131:1–133:8. Based on all of the above,

Dr. Bithoney concluded that exposure to lead during the Flint Water Crisis is by far the most likely cause of each of the Bellwether III children's acquired brain injuries.

LEGAL STANDARD

As the Supreme Court explained in *Daubert*, Rule 702 imposes a “gatekeeping” obligation on the courts to ensure that scientific testimony “is not only relevant, but reliable.” *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579, 589 (1993)⁴; *Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137, 147 (1999). But this gatekeeping function is not intended to displace the jury or the adversarial system: “Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence.” *Daubert*, 509 U.S. at 596.

ARGUMENT

I. THE RELIABILITY OF DR. BITHONEY'S GENERAL CAUSATION ANALYSIS IS WELL SUPPORTED ON THIS RECORD

Veolia argues that with respect to a few of the various conditions diagnosed in Plaintiffs— [REDACTED]

[REDACTED]⁵—Dr. Bithoney's

⁴ Unless indicated otherwise, case quotes are cleaned up, i.e., internal quotation marks and citation marks are omitted.

⁵ Because [REDACTED] order was not diagnosed by Dr. Hoffman or Dr. Jourdan, Dr. Bithoney will not specifically testify that it was caused by lead exposure at trial.

conclusion that exposure to lead *can* cause these conditions is unreliable. They argue that this is because Dr. Bithoney did not cite studies that use the *exact wording* of these diagnoses, or studies that explicitly assert that such diagnoses are *caused* (rather than associated with) exposures to lead. Veolia Br. at 6-9.

Plaintiffs acknowledge that this Court previously ruled Dr. Bithoney could not provide general causation testimony that [REDACTED] [REDACTED] are known to be caused by lead exposure. BWI Order at PageID.36881-36883. However, the principal reason for the Court's ruling was that it found that Dr. Bithoney had not *actually opined*, in his reports or deposition, that lead exposure causes either condition. *Id.* at PageID.36381-92 (The Court "[could not] evaluate the reliability of opinions that an expert does not express." *Id.* at PageID.36381-92).

In his work in this Bellwether III case, however, Dr. Bithoney, by contrast, explicitly opined that all of the diagnoses identified by Dr. Jourdan and Dr. Hoffman—[REDACTED] [REDACTED]—could be caused by lead exposure. Rebuttal Rep. at 4. Therefore, the remaining question becomes whether Bithoney's basis for this general causation opinion is sufficiently reliable to pass muster under Rule 702. A review of the record evidence supports that it is.

Dr. Bithoney explained that there is “strong scientific evidence” that even low-level exposure can cause five categories of conditions such as (1) executive functioning deficits; (2) decreased academic achievement; (3) decrements in overall intelligence; (4) ADHD; and (5) adverse behavioral effects, including disorders involving mood, impulsivity, and aggression. *Id.* at 2-4 (citing peer reviewed studies as to each condition). He further explained that *all* of the disorders diagnosed by Dr. Jourdan and Dr. Hoffman “are encompassed by” one or more of these five categories. *Id.* at 2-4.⁶

In support of this opinion, the strong scientific evidence he cited included the 2020 ATSDR Toxicological Profile for Lead as well as multiple peer reviewed periodicals. This is sufficiently reliable under Rule 702. As the Court previously recognized, “[t]he Toxicological Profile is one of the most authoritative sources available on the topic of lead poisoning.” BWI Order at PageID.36867. And reliance on peer-reviewed journals and studies is well regarded under *Daubert* in the context of general causation. *See In re Heparin Prods. Liab. Litig.*, 803 F. Supp. 2d 712, 733 (N.D. Ohio 2011) (listing cases).

Veolia objects that Dr. Bithoney’s analysis of general causation on these conditions is unreliable because the peer-reviewed publications in scientific and

⁶ For example, mood disorder is encompassed by adverse behavioral effects, including disorders involving mood, impulsivity, and aggression category.

medical journals, which Dr. Bithoney relied on, do not use the *precise words* used by Dr. Jourdan and Dr. Hoffman in rendering their diagnoses. Veolia Br. at 8. However, that the scientific and medical literature may not have included the *precise words* used in each diagnosis is proper for cross-examination, not a basis for exclusion under *Daubert*.

Moreover, Dr. Bithoney explained that it is not necessary to have specific studies that state the specific diagnostic labels used by Dr. Jourdan and Hoffman for him to conclude that those conditions are of the kind that are caused by lead exposure. Rebuttal Dep. at 168:24–175:20. This is because the existing literature Dr. Bithoney reviewed, along with his general understanding of how the condition presents, permits him to draw the inference that these specific diagnostic labels are encompassed by the categories of conditions that are known in the scientific community to be associated with lead exposure. *See, e.g., id.* at 171:16–172:19. It is well accepted that experts may permissibly draw such inferences. *See Heparin*, 803 F. Supp. 2d at 742 (“to be considered appropriately scientific, the expert need not testify to what is ‘known’ to a certainty but must only state an inference or assertion derived by the scientific method.”); *In re Meridia Prods. Liab. Litig.*, 328 F. Supp. 2d 791, 800 (N.D. Oh. 2004) (epidemiological studies are the preferred mode of showing general causation, though they are not required).

Veolia also asserts that Dr. Bithoney testified that he could not opine on

whether the literature he cites supports a causal relationship between lead and Dr. Jourdan's and Dr. Hoffman's diagnoses, because he did not know what diagnostic criteria applied. That is misleading. Although Dr. Bithoney explained that he was not familiar with the specific diagnostic criteria needed to *diagnose* these specific conditions, at his rebuttal deposition, he made clear his understanding of what the conditions were and how he understands them to present in children based on his own research and clinical experience. Rebuttal Dep. at 35:3-23-37:17 [REDACTED]; *id.* at 39:3-45:9 [REDACTED]; *id.* at 45:18-46:17 [REDACTED]; *id.* at 47:15-48:1, 49:6-18 ([REDACTED]).

[REDACTED] There is nothing wrong with this testimony. If at trial Veolia can demonstrate a difference between the definition of [REDACTED] used by Dr. Bithoney and Dr. Jourdan or Dr. Hoffman, the Court can further address the matter at that juncture. *See Jahn v. Equine Serv.*, PSC, 233 F.3d 382, 388 (6th Cir. 2000) ("Experts are permitted a wide latitude in their opinions, including those not based on firsthand knowledge, so long as the expert's opinion has a reliable basis in the knowledge and experience of the discipline.").

Overall, Dr. Bithoney can reliably opine that all of the deficits diagnosed by Dr. Jourdan and Dr. Hoffman—including those challenged in Veolia's motion—are encompassed by the categories of conditions known to be caused by exposures to lead. The fact that he did not base this opinion on the specific diagnostic criteria

or cite studies that use the exact same diagnostic labels does not warrant exclusion, but instead, goes to the weight of the evidence and is at most fodder for vigorous cross-examination. *See McLean v. 988011 Ontario, Ltd.*, 224 F.3d 797, 801 (6th Cir. 2000) (“However, mere ‘weaknesses in the factual basis of an expert witness’ opinion ... bear on the weight of the evidence rather than on its admissibility.”).

II. THE RELIABILITY OF DR. BITHONEY’S SPECIFIC CAUSATION TESTIMONY IS WELL ESTABLISHED

Veolia challenges Dr. Bithoney’s specific causation testimony regarding identification of the exact amount of lead Plaintiffs needed to be and were exposed to, as well as his differential diagnosis. Both arguments are not only without merit, but they are also flawed on their face as Veolia merely reiterates objections that were previously rejected by the Court when it previously found Dr. Bithoney’s specific causation analysis was reliable.⁷

A. Dr. Bithoney’s Opinion that Plaintiffs Were Exposed to Sufficient Amounts of Lead from the Flint Water to Cause their Conditions is Reliable

Despite the Court’s prior rulings, Veolia complains that Dr. Bithoney failed to show Plaintiffs were exposed to enough lead to cause their injuries, and that he was not exact enough in quantifying the precise level of lead Plaintiffs were exposed

⁷ Veolia has not even attempted to, and cannot, show that the Court made any errors in her prior ruling, let alone errors that are “obvious, clear, unmistakable, manifest, or plain” warranting reconsideration. *Guertin v. Michigan*, No. 16-cv-12412, 2017 U.S. Dist. LEXIS 109373, at *5 (E.D. Mich. July 14, 2017).

to from Flint water during the Flint Water Crisis. Veolia Br. at 10-18. These arguments do not establish that Dr. Bithoney's testimony must be excluded.

i. Sufficient Exposure to Cause Harm

Veolia asserts (reiterating its argument from Bellwether I) that Dr. Bithoney does not provide specific evidence or testimony as to the specific amount to lead necessary to cause each of the conditions from which Plaintiffs suffer. Veolia Br. at 10-12. However, this argument is without merit for the same reasons it failed in Bellwether I. *See* BWI Order at PageID.36892-94. Specifically, the Court held that "Dr. Bithoney's conclusion that each Plaintiff was exposed to enough lead to cause those harms is a reasonable inference from the available evidence." *Id.* at PageID.36894. The "available evidence" which the Court referred to was: (1) bone scan measurements, showing that the children have thousands of micrograms in their bones; (2) estimates regarding lead absorption and peak blood lead; and (3) a plethora of literature that shows lead is known to cause neurocognitive harms at quantities as low as 1 mcg/dl of blood lead. *Id.* at PageID.36892-94.

That same evidence is still present and applicable to the Bellwether III Plaintiffs. *See e.g.*, Initial Reps. at pdf 8; Initial Dep. at 454:13-15; 260:5-13 (discussing bone lead levels); Rebuttal Rep. at 6 ("All of the children drank between 3 to 6 glasses of water per day" ... "a toddler who daily consumes 1 liter (4 glasses) of Flint water with a lead content of 10ppb for approximately 3 months would have

absorbed between 450 mcg and 900 mcg of lead.”); *id.* at 5 (peak blood). Therefore, the Court’s prior ruling on this point is sound and should apply with equal force.

Veolia’s objections on this point— that Dr. Bithoney does not identify the *specific low levels* linked with the specific conditions Plaintiffs suffer from, or account for the *magnitude* of lead effects— do not provide a basis to disturb the Court’s prior ruling.

First, these arguments ignore the *hundreds of studies* that Dr. Bithoney cited across his reports, which show that these types of health effects can be caused at levels as low as 1 mg/dl. *See* Highlighted Reports at pdf pgs. 11-12, 14, 21-22, 45-51, 58. Indeed, Dr. Bithoney explains that the National Institute of Health, arguably the Nation’s most credible scientific body, reports that: “Health effects [such as diminished IQ scores and academic achievement and increased behavioral problems and attention-related behaviors] are found at blood lead levels of less than 5 [mc]g/dL.” [Lead, NIH](#).⁸

Second, Veolia’s arguments hold Dr. Bithoney to an unreasonable standard of exacting science, far beyond the bounds of *Daubert* and its progeny, which recognize that “there are no certainties in science,” 509 U.S. at 590. And that *Daubert* **does not** “require[] ‘precise’ or ‘exact’ information concerning dosage or the dose-

⁸ The NIH also recognizes that: “No amount [of lead] is safe” and “Any amount of lead in the body can cause harm.” [Lead and Your Health, NIH](#).

response relationship. *Adams v. Cooper Indus.*, No. 03-476-JBC, 2007 U.S. Dist. LEXIS 55131, at *32 (E.D. Ky. July 30, 2007); *McClain v. Metabolife Int'l, Inc.*, 401 F.3d 1233, 1241 n.6 (11th Cir. 2005) (“One should not conclude . . . that to pass *Daubert* muster an expert must give precise numbers about a dose-response relationship. Some ambiguity about individual responses is expected.”); *see also Hardyman v. Norfolk & W. Ry. Co.*, 243 F.3d 255, 265-66 (6th Cir. 2001) (“[While precise information concerning the exposure necessary to cause specific harm to humans and exact details pertaining to the plaintiff’s exposure are beneficial, such evidence is not always available, or necessary...”).⁹

ii. Sufficient Exposure to Lead from the Water

Veolia objects that Dr. Bithoney’s specific-causation opinions should also be excluded because they are based on an unreliable assessment of Plaintiffs’ actual exposures to lead in Flint’s water during the crisis. Again, although Veolia may present this objection in a slightly different order and with a few new assertions, they are making the same arguments that the Court already properly rejected in its prior order. *Compare*, Veolia Br. at 12–22, *with* BWI Order at PageID.36885-92.

Water Lead Levels. First, Veolia again asserts that Dr. Bithoney’s opinions are not supported by *any* evidence of the actual amount of lead that was in Plaintiffs’

⁹*In Hardyman*, the Sixth Circuit reversed a *Daubert* ruling because the lower court “call[ed] for a dose/response relationship or threshold level where none can be had.” 243 F.3d. at 264.

drinking water. For the second time, this argument fails because, as the Court previously ruled, Dr. Bithoney can reliably opine that Plaintiffs were exposed to lead based on the *direct evidence* of exposure of the bone scan readings. BWI Order at PageID.36886.¹⁰ And because “the absence of quantitative lead measurements of Plaintiffs’ water during the relevant time is [not] dispositive.” *Id.* at PageID.36887. The Court explained: “Plaintiffs in toxic torts cases will rarely have access to such contemporaneous, quantitative measurements. After all, we do not ordinarily measure our environment for toxins before there is any reason to suspect that toxins may be present.” *Id.* at PageID.36887-88 (distinguishing cases.); *see also Heller v. Shaw Indus., Inc.*, 167 F.3d 146, 157 (3d Cir. 1999) (noting that “even absent hard evidence of the level of exposure to the chemical in question, a medical expert could offer an opinion that the chemical caused plaintiff’s illness.”).

Moreover, as was the case in Bellwether I, Dr. Bithoney has plenty of evidence supporting the inference that Plaintiffs were exposed to significant amounts of lead in the water they consumed both in their homes as well as the various places they spent significant time. For example, he conducted a geo-mapping study which showed, *inter alia*, that: “All [Plaintiffs’] had a primary residential address in wards

¹⁰ Notably, based on the bone scans, Dr. Bithoney was able to establish that Plaintiffs were exposed to “clinically significant ingestions” that could only be explained by a chronic ongoing exposure. From this, he reasonably inferred that this was most likely attributable to the ongoing cumulative exposure of leaded water. Initial Dep at 873:2-874:5.

that had at least 10% water samples that exceeded 15 ppb during the Flint water crisis.” Supplement at pdf pg. 15. And that all of the Plaintiffs “have either for some time lived at a primary residential address, or spent time regularly at a secondary address [], in wards where more than 18% of the water is tested to have a lead level over 15 ppb, during the Flint water crisis.” *Id.* Another example is Dr. Bithoney’s review of the FAST Start data and home inspection reports, which reflected that Plaintiffs lived or spent significant time at homes that had lead service lines, or which had leaded plumbing components. Rebuttal Rep. at 10-13. Both of which, he noted, are known to cause leaching of lead into drinking water. *Id.*

Blood And Bone Lead Levels. Of course, Veolia again argues that Dr. Bithoney was wrong to rely on the bone scan lead measurements (showing that the children have hundreds or thousands of micrograms of lead in their bones), and that he discounts the importance of Plaintiffs’ blood lead tests. But this Court has already rejected those *exact arguments*. As to the bone lead measurements, the Court explained that “[i]t is clear that Dr. Bithoney can reliably opine that the Plaintiffs were exposed to lead,” based on the bone scans.¹¹ BWI Order at PageID.36886. As to the blood lead tests, the Court ruled that “Dr. Bithoney also does not discount the importance of the blood lead tests ... he carefully explains why those results do not

¹¹ To the extent Veolia raises new bone scan reliability arguments in their Dr. Specht *Daubert* motion, those arguments are without merit and will be addressed in Plaintiffs’ opposition to that motion.

show that there was no exposure to lead.” *Id.* at PageID.36886. The careful explanation that the Court was referring to is Dr. Bithoney’s analysis on two points: (1) that low or negative blood lead tests do not undermine that each child was exposed to lead (because of the short half-life of lead in children’s blood); and (2) that peak bone lead estimates suggest that the peak blood lead levels could have been far higher than reported. *Id.* at PageID.36871-83; *see also id.* at PageID.36893. Dr. Bithoney has provided the same reliable explanation for his analysis of the blood lead tests of the Bellwether III children. *See* Initial Reps. at pdf pg. 6-8, 20, 24-26, 40-41, 55-57; 77-80, 96-98, 111-114; Rebuttal Rep. at 5-6.

Additionally, as to the peak blood estimates, Veolia restates the *exact same* arguments raised in their motion for reconsideration of the Court’s BWI Bithoney Daubert Order—that any reliance on Dr. Bithoney’s peak blood assessment is incorrect because Dr. Bithoney himself clarified that he could not provide estimates of Plaintiffs’ blood lead levels based on Plaintiffs’ bone scans. *Compare* Veolia Br. at 16-17, *with* Case No. 17-cv-10164, ECF No. 579 (BWI Reconsideration Order) at PageID.42534-36. This argument fails for the *exact same* reasons previously set forth by the Court, *id.* at PageID.42536 and is totally irrelevant to the reliability of Dr. Bithoney’s conclusions.

Veolia also adds a new spin on their blood lead level argument, pointing to a study by Hernan Gomez. They allege that this study proves that Plaintiffs’ blood

lead levels were comparable to the levels observed in Flint children in the years before the water crisis, and thus, “[t]his data, which represents the best available method for measuring exposure, is irreconcilable with Dr. Bithoney’s theory that Plaintiffs were exposed to substantial amounts of lead in Flint’s water.” Veolia Br. at 15-16. But Veolia’s *non-expert* interpretation of the Gomez data is irrelevant to the reliability of Dr. Bithoney’s conclusion. And the same would be true even if they had an expert repeat this theory. *See Phillips v. Cohen*, 400 F.3d 388, 399 (6th Cir. 2005) (“Competing expert opinions present the ‘classic battle of the experts and it is up to a jury to evaluate what weight and credibility each expert opinion deserves.”); *United States v. Sullivan*, 246 F. Supp. 2d 696, 698 (E.D. Ky. 2003) (“That some scientists in a field disagree with an expert’s theories or conclusions does not render those theories or conclusions unreliable under *Daubert*.”).

Epidemiological Evidence. Finally, Veolia again argues that Dr. Bithoney relies too heavily on epidemiological studies regarding his conclusion that Plaintiffs’ lead exposure occurred during the Flint Water Crisis. Veolia Br. at 17-18. Perhaps tired of rewriting the exact same arguments from Bellwether I, on this point Veolia simply refers the Court to pages of their prior briefing. *Id.* It goes without saying that merely referencing their prior brief is not sufficient to show that the Court’s prior reasoning on this point was in error.

Further, Veolia disingenuously asserts that what they meant to argue last time was that “[t]he analytical gap between the data in the studies Dr. Bithoney cites and his conclusions regarding both the amount and source of Plaintiffs’ lead exposures is too great to be admissible.” Veolia Br. at 18. Because Veolia makes no effort to specify which studies or gaps it is referring to, the Court should reject this argument on its face. But out of an abundance of caution, to the extent Veolia is rehashing its criticisms from its BWI motion, those are unavailing for the reasons set forth below.

First, Veolia had pointed to Dr. Bithoney’s reference to the Virginia Tech University Study,¹² which found that 40% of the homes that the researchers tested had lead levels greater than 5 ppb and that 17% of the homes had water lead levels greater than 15 ppb. Veolia criticized Dr. Bithoney for relying on this study because one of Veolia’s experts apparently opined that “water lead levels above 15 ppb were common in Flint even before the crisis.” Veolia BWI Br. at 26. Even assuming that Veolia’s expert can support this conclusory statement, it does not show an analytical gap, nor does it make Dr. Bithoney’s reference to this study as one (of many) factors in determining the most likely source of Plaintiffs lead exposure unreliable. *See Phillips*, 400 F.3d at 399.¹³

¹² Jeffrey Parks & Anurag Mantha, *Lead Testing Results for Water Sampled by Residents*, Flint Water Study (Sept. 2015).

¹³ Moreover, Dr. Bithoney further explained: “It is postulated by the VT scientists that if they were able to study “high-risk homes” the prevalence of elevated

Next, Veolia takes issue with Dr. Bithoney's reference to statistics regarding the FAST Start program because he had testified, in Bellwether I, that he did not refer to the underlying data for the Bellwether I Plaintiffs. That concern is without merit, and moot. For the Bellwether III Plaintiffs, Dr. Bithoney reviewed the underlying FAST data, including data specific to their relevant addresses. Rebuttal Rep. at 10–13.

Finally, Veolia previously took issue with Dr. Bithoney's reference to a CBS 60 Minutes segment, which explained that preliminary findings showed that there was an increase in the number of children in special education post-flint water crisis. Veolia argued it was problematic that Dr. Bithoney had not reviewed the underlying data. This critique is moot. In his work in the Bellwether III case, Dr. Bithoney explained that he reviewed the underlying information from the Flint Department of Education showing that increase. Initial Dep. at 289:21–292:4. And he further explained that although later studies he reviewed showed the overall percentage of children receiving special education decreased, the fact that the population plummeted actually shows that the portion of the population enrolled in special education *increased* in the years following the crisis. *Id.* at 639:7–646:6; Rebuttal

Pb in the water would be significantly higher. Some high-risk homes in other surveys had Pb levels in the many thousands of parts per billion but none of them were included in this survey.” Initial Reps. at pdf pgs. 6, 23, 40, 57-58, 75, 92, 110.

Rep. at 18; 36–37 (citing State of Flint Kids 2021 Annual Report, STATE OF FLINT KIDS, (2021); School District of the City of Flint, MI SCHOOL DATA).

B. Dr. Bithoney’s Differential Diagnosis Remains Reliable

Veolia also argues that, despite spending many hours analyzing the facts pertaining to each Plaintiff, in an exhaustive effort to identify any plausible cause of their conditions *other* than their exposure to lead during the time period in question, Dr. Bithoney should have done even more to rule out alternate causes and sources of lead exposure. But this Court already ruled that Dr. Bithoney’s detailed approach was a reliable differential diagnosis. BWI Order at PageID.36895-98.

i. Alternate Causes

Veolia reasserts its argument that Dr. Bithoney’s differential diagnosis is unreliable because he did not evaluate Bellwether III Plaintiffs for “every single thing that can cause damage” or for “unknown causes.” Veolia Br. at 20. This argument is once again without merit. As the Court previously ruled, “specific causation experts need not rule out every conceivable alternative cause of an injury,” because “the fact that several possible causes might remain uneliminated only goes to the accuracy of the conclusion, not to the soundness of the methodology.” BWI Order at PageID.36897. The Court’s ruling was, of course, in line with applicable Sixth Circuit law. *See Best v. Lowe’s Home Ctrs., Inc.*, 563 F.3d 171, 181 (6th Cir.

2009) (“But doctors need not rule out every conceivable cause in order for their differential-diagnosis-based opinions to be admissible.”).

Moreover, contrary to Veolia’s assertion, Dr. Bithoney did identify the range of causes for Plaintiffs’ conditions and systematically ruled them out. Initial Dep. at 142:9-147:15; Rebuttal Rep. at 8-9; 38. Indeed, when pressed on how thorough he had been in his analysis, he readily agreed that he was obligated to rule out all “*reasonable* alternative causes for these conditions,” and he testified that he had done so. Rebuttal Dep. at 131:18-24 (emphasis added). Dr. Bithoney elaborated that he had spent a considerable amount of time on this analysis, using the same rigor for the methodology that he taught at Harvard Medical School, and he considered “every possible thing that [he] could think of based on 35 years of clinical experience to find out what caused this, and [he] came up with lead, even though there were other things that contributed, too.” *Id.* at 134:3 to 136:20.

Veolia also purports that Dr. Bithoney’s “goal was to ‘rule’ in a cause,” because he found lead to be the cause and then he stopped. Veolia Br. at 22-23. This is a mischaracterization of Dr. Bithoney’s testimony. Dr. Bithoney did not assert that his goal was to rule in lead and nothing else. Rather he explained that it is unnecessary (and not typical) to look for and rule out every single possible known or unknown cause, especially when there is no evidence to support the investigation of those causes. Rebuttal Dep. at 139:3–140:2; *see also* Initial Dep. at 456:3-9

(“[Y]ou know, when you hear the sound of hoofbeats, don’t think of zebras, think of horses. That’s what they tell us in med school.”); Rebuttal Rep. at 9 (“If there was evidence of a factor that might be related to one or more of the types of conditions identified by Drs. Jourdan and Hoffman, I considered them and ruled them out.”).

This is consistent with reliable and accepted methodology. *See Best*, 563 F.3d at 181 (“Having no evidence that virus, accident, brain tumor, or brain surgery were applicable in Best’s case, Dr. Moreno focused on chemicals, medications, or idiopathic causes.”); *see also Lauzon v. Senco Prods., Inc.*, 270 F.3d 681, 693 (8th Cir. 2001) (the requirement to rule out other possible causes “cannot be carried to a quixotic extreme”). And to the extent Veolia seeks to critique this, they can raise it on cross examination at trial. *See Gislaved Gummi AB*, 178 F.3d 257, 265-66 (4th Cir. 1999) (not ruling out other causes affects weight, not admissibility); *Best*, 563 F.3d at 181 (“If such evidence exists, or if [expert] failed to consider some other likely cause, [defendants] [are] free to attack [his] opinion on that basis at trial.”).

Finally, Veolia asserts that because Dr. Bithoney explained that he used the standard approach that he would use with any clinical patient, his methodology is unreliable. This is without merit. Indeed, the Sixth Circuit has explained that a differential diagnosis can be deemed reliable when it does exactly that. *See Best*, 563 F.3d at 179 (“A medical-causation opinion in the form of a doctor’s differential diagnosis is reliable and admissible where the doctor ... engages in standard

diagnostic techniques by which doctors normally rule out alternative causes to reach a conclusion as to which cause is most likely.”).¹⁴

ii. Alternate Exposures to Lead

Veolia asserts that Dr. Bithoney did not reliably rule out alternative sources of lead exposure because he admits that it is possible that the children may have also been exposed to lead from other sources. But as the Court previously ruled on this point, *Daubert* “does not require perfect methodology” and “[e]xpert testimony is not limited to “what is known to a certainty.” BWI Order at PageID.36890 (citing cases). Thus, [i]t is sufficient for an expert to reasonably identify the **most likely cause of an exposure.**” *Id.* (emphasis added); *see also Best*, 563 F.3d at 182 (treating physician could testify to the “most likely cause” of the injury); *Hardyman*, 243 F.3d at 262 (“Furthermore, differential diagnosis is not a method which lends itself to establishing a ‘direct link’ between an activity and an injury.”); *Contreras v. Sec’y of HHS*, 107 Fed. Cl. 280, 283 (2012).

That is exactly what Dr. Bithoney has done here. Based on a careful review of all Plaintiff specific data concerning potential lead sources in and around Plaintiffs home (including detailed nutritional histories, product use, lead paint hazards, and hand to mouth activity), Dr. Bithoney found no indication of any Plaintiff being

¹⁴ The cases Veolia cites on this point are of no moment. In those cases, the courts were critical experts’ attempt to use the diagnosis of a disease in lieu of an actual differential diagnosis determining the cause of the disease.

exposed to persistent amounts of lead, other than Plaintiffs’ ongoing exposure as a result of consumption of and exposure to water during the Flint Water Crisis. Rebuttal Rep. at 8-10, 14, 42-43; *see also* Initial Dep. at 35:9-38:16, 45:2-24, 48:3-49:19, 55:8-57:13, 324:5-328:6, 330:12-335:24; 339:2-11; 465:16-469:7, 662:7-664:15. Indeed, he found “no other explanation for why they have lead in their bodies.” *Id.* at 172:12-13.

Moreover, Dr. Bithoney provided ample “reasonable explanation as to why [he] concluded that [any alternative lead] was not the [most likely] cause.” *Nusbaum v. Enlighten Family Chiropractic, LLC*, No. 19-cv-10223, 2023 U.S. Dist. LEXIS 9403, at *21 (E.D. Mich. Jan. 19, 2023). For example, as to the paint hazards, he explained that there was no evidence [(in the depositions or interviews he reviewed) of hand-to-mouth activity, and many of the lead hazards were in areas that the children did not access.” Rebuttal Rep. at 9-10; *see also* Initial Dep. at 851:10-852:2; Rebuttal Dep. at 191:6-192:5.

Accordingly, Veolia’s argument that Dr. Bithoney’s assessment is flawed because he stated that alternate lead exposures were *possible* “goes to the accuracy of the conclusion, not to the soundness of the methodology,” *Nusbaum*, 2023 U.S. Dist. LEXIS 9403, at *22, and therefore does not warrant exclusion. *Id.* (“The fact that several possible causes might remain uneliminated only goes to the accuracy of the conclusion, not to the soundness of the methodology.”).

CONCLUSION

Accordingly, Plaintiffs respectfully request that the Court deny Veolia's motion in its entirety.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on May 21, 2024, I electronically filed this document with the Clerk of the Court using the ECF System, which will send notification to the ECF counsel of record.

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